SEQUENCE LISTING

	-			
<110>	Wallach, David Kang, Tae Bong			
	Ben-Moshe, Tehila Varfolomeev, Eugene Pewzner Jung, Yael			
<120>	METHODS OF MODULATING HEMATOPOIESIS			
<130>	26976			
<160>	23			
<170>	PatentIn version 3.2			
<210>	1			
<211>				
<212>	DNA			
<213>	Artificial sequence			
<220>				
	Single strand synthetic DNA oligonucleotide			
<400> agctgg	1 ctgg tggcagatgg	20		
<210>	2			
<211>				
<212>				
<213>	Artificial sequence			
<220>				
<223>	Single strand synthetic DNA oligonucleotide			
<400>	2			
cgttga	tgcc ggtgaacgtg	20		
<210>	2			
<211>				
<212>				
	Artificial sequence			
<220>				
<223>	Single strand synthetic DNA oligonucleotide			
<400>	3	25		
tageet	cttt ggggttgttc tactg	25		
<210>	4			
<211>	25			
<212>				
<213>	Artificial sequence			
<220>				
<223>	Single strand synthetic DNA oligonucleotide			
<400>	4 httcg tttagtctct acttc	25		
cggggc	citing titing title action	23		
<210>	5			
<211>				
<212>				
<213>	Artificial sequence			
<220>	Single strong combhetic DWA sligggreating			
<223>	Single strand synthetic DNA oligonucleotide			
<400>	5	25		
tagcctcttt ggggttgttc tactg 25				

	6 25 DNA Artificial sequence	
<220>		
<223>	Single strand synthetic DNA oligonucleotide	
<400> tagcct	6 cttt ggggttgttc tactg	25
<210>	7	
<211> <212>		
<213>	Artificial sequence	
<220> <223>	Single strand synthetic DNA oligonucleotide	
<400> cgcggt	7 cgac ttatcaagag gtagaagagc tgtaac	36
<210>	8	
<211>	24	
<212> <213>		
	•	
<220> <223>	Single strand synthetic DNA oligonucleotide	
<400>	8	2 4
gcgaad	cacgo ogtgtttcaa gggo	4-3
4010 >		
<210> <211>		
<212>	DNA	
<213>	Artificial sequence	
<220> <223>	Single strand synthetic DNA oligonucleotide	
<400>		22
ggaaa	caagc tggtagctga ca	
<210>	10	
<211>	21	
<212> <213>	DNA Artificial sequence	
<220>		
<223>	Single strand synthetic DNA oligonucleotide	
<400>	10 gtcaa cacaagatgc t	21
<210>		
<211> <212>		
<213>	Artificial sequence	
<220>		
<223>	Single strand synthetic DNA oligonucleotide	
<400>	· 11 cctct accgccagaa	20
aycut		
<210>	• 12	
<211>		

```
<212> DNA
<213> Artificial sequence
<220>
<223> Single strand synthetic DNA oligonucleotide
<400> 12
                                                                      20
gtgccagact cctccttgct
<210> 13
<211> 21
<212> DNA
<213> Artificial sequence
<220>
<223> Single strand synthetic DNA oligonucleotide
<220>
<221> misc_feature
<222> (1)..(1)
<223> 6-FAM (6-caroxy-fluorescein) conjugated nucleotide
<220>
<221> misc_feature
<222> (21)..(21)
<223> MGB (minor grove binder) conjugated nucleotide
                                                                      21
ttaacttcct cacttgatca t
<210> 14
<211> 16
<212> DNA
<213> Artificial sequence
<220>
<223> Single strand synthetic DNA oligonucleotide
<220>
<221> misc_feature
<222> (1)..(1)
<223> 6-FAM (6-caroxy-fluorescein) conjugated nucleotide
<220>
<221> misc_feature
<222> (16)..(16)
<223> MGB(minor grove binder) conjugated nucleotide
<400> 14
                                                                      16
accagaaccg agcaaa
<210> 15
<211> 64
<212> DNA
<213> Artificial sequence
<220>
<223> SiRNA sense oligonucleotide
gatccccgtt cctgagcctg gactacttca agagagtagt ccaggctcag gaactttttg
                                                                      60
                                                                       64
gaaa
<210> 16
<211> 64
<212> DNA
<213> Artificial sequence
```

atgaagaaca aacctcgggg atactgtctg atcatcaaca atcatgattt cagcaaggcc

cqqqaaqaca taacccaact ccqaaaaatq aaggacagaa aaggaacaga ctgtgataaa

1020

1080

				•		
gaggctctga	gtaagacctt	taaggagctt	cattttgaga	tagtatctta	cgacgactgc	1140
actgcaaatg	aaatccacga	gattctagaa	ggctaccaaa	gcgcagacca	caagaacaaa	1200
gactgcttca	tctgctgtat	cctatcccac	ggtgacaagg	gtgtcgtcta	tggaacggat	1260
gggaaggagg	cctccatcta	tgacctgaca	tcttacttca	ctggttcaaa	gtgcccttcc	1320
ctgtctggga	aacccaagat	ctttttcatt	caggcttgcc	aaggaagtaa	cttccagaaa	1380
ggagtgcctg	atgaggcagg	cttcgagcaa	cagaaccaca	ctttagaagt	ggattcatca	1440
tctcacaaga	actatattcc	ggatgaggca	gactttctgc	tgggaatggc	tacggtgaag	1500
aactgcgttt	cctaccgaga	tcctgtgaat	ggaacctggt	atattcagtc	actttgccag	1560
agcctgaggg	aaagatgtcc	tcaaggagat	gacattctta	gcatcctgac	tggcgtgaac	1620
tatgacgtga	gcaataaaga	cgacaggagg	aacaagggaa	agcagatgcc	acagcccacc	1680
ttcacactac	ggaagaagct	cttcttccct	ccctaatgat	gtgtgctctc	cacagttcac	1740
atggcttatc	tgtgcacttt	tgtgtggatg	agtctaattt	attttttaga	atttcttttg	1800
cttttgaatt	tacatttaca	taattttccc	ttttcttccc	tttaaaccct	tctttgttat	1860
gttccaattt	caaatacatg	gcctcttttc	tcattaactg	ttgtacacac	acatacatac	1920
acacacacac	acacacacac	acatttctaa	atataacctg	tatactatca	cttgt	1975

<210> 20 <211> 420 <212> PRT

<213> Homo sapiens

<400> 20

Ser Phe Leu Lys Glu Leu Leu Phe Arg Ile Asn Arg Leu Asp Leu Leu 1 5 10 15

Ile Thr Tyr Leu Asn Thr Arg Lys Glu Glu Met Glu Arg Glu Leu Gln

Thr Pro Gly Arg Ala Gln Ile Ser Ala Tyr Arg Val Met Leu Tyr Gln

Ile Ser Glu Glu Val Ser Arg Ser Glu Leu Arg Ser Phe Lys Phe Leu

Leu Gln Glu Glu Ile Ser Lys Cys Lys Leu Asp Asp Asp Met Asn Leu 65 70 75 80

Leu Asp Ile Phe Ile Glu Met Glu Lys Arg Val Ile Leu Gly Glu Gly 95

Lys Leu Asp Ile Leu Lys Arg Val Cys Ala Gln Ile Asn Lys Ser Leu $100 \hspace{1cm} 105 \hspace{1cm} 110 \hspace{1cm}$

Leu Lys Ile Ile Asn Asp Tyr Glu Glu Phe Ser Lys Glu Arg Ser Ser

Ser Leu Glu Gly Ser Pro Asp Glu Phe Ser Asn Gly Glu Glu Leu Cys

Gly Val Met Thr Ile Ser Asp Ser Pro Arg Glu Gln Asp Ser Glu Ser

6 150 145 155 160 Gln Thr Leu Asp Lys Val Tyr Gln Met Lys Ser Lys Pro Arg Gly Tyr 170 Cys Leu Ile Ile Asn Asn His Asn Phe Ala Lys Ala Arg Glu Lys Val Pro Lys Leu His Ser Ile Arg Asp Arg Asn Gly Thr His Leu Asp Ala Gly Ala Leu Thr Thr Thr Phe Glu Glu Leu His Phe Glu Ile Lys Pro His Asp Asp Cys Thr Val Glu Gln Ile Tyr Glu Ile Leu Lys Ile Tyr Gln Leu Met Asp His Ser Asn Met Asp Cys Phe Ile Cys Cys Ile Leu Ser His Gly Asp Lys Gly Ile Ile Tyr Gly Thr Asp Gly Gln Glu Ala Pro Ile Tyr Glu Leu Thr Ser Gln Phe Thr Gly Leu Lys Cys Pro Ser

Leu Ala Gly Lys Pro Lys Val Phe Phe Ile Gln Ala Cys Gln Gly Asp

Asn Tyr Gln Lys Gly Ile Pro Val Glu Thr Asp Ser Glu Glu Gln Pro

Tyr Leu Glu Met Asp Leu Ser Ser Pro Gln Thr Arg Tyr Ile Pro Asp

Glu Ala Asp Phe Leu Leu Gly Met Ala Thr Val Asn Asn Cys Val Ser

Tyr Arg Asn Pro Ala Glu Gly Thr Trp Tyr Ile Gln Ser Leu Cys Gln

Ser Leu Arg Glu Arg Cys Pro Arg Gly Asp Asp Ile Leu Thr Ile Leu

Thr Glu Val Asn Tyr Glu Val Ser Asn Lys Asp Asp Lys Lys Asn Met

Gly Lys Gln Met Pro Gln Pro Thr Phe Thr Leu Arg Lys Lys Leu Val

Phe Pro Ser Asp

<210> 21 <211> 2887

<212> DNA <213> Homo sapiens <400> 21 gattetgeet ttetgetgga gggaagtgtt tteacaggtt etecteettt tatettttgt 60 120 gttttttttc aagccctgct gaatttgcta gtcaactcaa caggaagtga ggccatggag ggaggcagaa gagccagggt ggttattgaa agtagaagaa acttcttcct gggagccttt 180 cccacccct tccctgctqa qcacqtqqaq ttagqcaggt taggggactc ggagactgcg 240 atggtgccag gaaagggtgg agcggattat attctcctgc cttttaaaaa gatggacttc 300 agcagaaatc tttatgatat tggggaacaa ctggacagtg aagatctggc ctccctcaag 360 ttcctgagcc tggactacat tccgcaaagg aagcaagaac ccatcaagga tgccttgatg 420 ttattccaga gactccagga aaagagaatg ttggaggaaa gcaatctgtc cttcctgaag 480 gagetgetet teegaattaa tagaetggat ttgetgatta eetaectaaa caetagaaag 540 600 gaggagatgg aaagggaact tcagacacca ggcagggctc aaatttctgc ctacagggtc atgctctatc agatttcaga agaagtgagc agatcagaat tgaggtcttt taagtttctt 660 720 ttgcaagagg aaatctccam atgcaaactg gatgatgaca tgaacctgct ggatattttc atagagatgg agaagagggt catcctggga gaaggaaagt tggacatcct gaaaagagtc 780 840 tqtqcccaaa tcaacaaqag cctgctgaag ataatcaacg actatgaaga attcagcaaa gagagaagca gcagccttga aggaagtcct gatgaatttt caaatgggga ggagttgtgt 900 960 ggggtaatga caatctcgga ctctccaaga gaacaggata gtgaatcaca gactttggac aaaqtttacc aaatqaaaag caaacctcgg ggatactgtc tgatcatcaa caatcacaat 1020 tttgcaaaag cacgggagaa agtgcccaaa cttcacagca ttagggacag gaatggaaca 1080 1140 cacttggatg caggggcttt gaccacgacc tttgaagagc ttcattttga gatcaagccc cacgatgact gcacagtaga gcaaatctat gagattttga aaatctacca actcatggac 1200 1260 cacagtaaca tggactgctt catctgctgt atcctctccc atggagacaa aggcatcatc tatggcactg atggacagga ggcccccatc tatgagctga catctcagtt cactggtttg 1320 1380 aagtgccctt cccttgctgg aaaacccaaa gtgtttttta ttcaggcttg tcagggggat 1440 aactaccaqa aaggtatacc tgttgagact gattcagagg agcaacccta tttagaaatg 1500 qatttatcat cacctcaaac gagatatatc ccggatgagg ctgactttct gctggggatg qccactqtqa ataactqtqt ttcctaccga aaccctgcag agggaacctg gtacatccag 1560 tcactttgcc agagcctgag agagcgatgt cctcgaggcg atgatattct caccatcctg 1620 actqaaqtqa actatqaaqt aaqcaacaaq qatqacaaqa aaaacatqgg gaaacagatg 1680 cctcagccta ctttcacact aagaaaaaaa cttgtcttcc cttctgattg atggtgctat 1740 1800 tttgtttgtt ttgttttgtt ttgttttttt gagacagaat ctcgctctgt cgcccaggct 1860 ggagtgcagt ggcgtgatct cggctcaccg caagctccgc ctcccgggtt cacgccattc 1920 tectgeetea geeteeegag tagetgggae tacaggggee egeeaceaca cetggetaat tttttaaaaa tattttagt agagacaggg tttcactgtg ttagccaggg tggtcttgat 1980 2040 ctcctgacct cgtgatccac ccacctcggc ctcccaaagt gctgggatta caggcgtgag ccaccgcgcc tggccgatgg tactatttag atataacact atgtttattt actaattttc 2100 tagattttct actttattaa ttgttttgca cttttttata agagctaaag ttaaatagga 2160 tattaacaac aataacactg tctcctttct cttacgctta aggctttggg aatgttttta 2220

gctggtggca ataaatacca gacacgtaca aaatccagct atgaatatag agggcttatg 2280 attcagattg ttatctatca actataagcc cactgttaat attctattaa ctttaattct 2340 ctttcaaagc taaattccac actaccacat taaaaaaaatt agaaagtagc cacgtatggt 2400 ggeteatgte tataateeea geaetttggg aggttgaggt gggaggattt gettgaaeee 2460 aagaggtcca aggctgcagt gagccatgtt cacaccgctg cactcaagct tgggtgacag 2520 agcaagaccc cgtccccaaa aaaatttttt ttttaataaa cccaaatttg tttgaaaact 2580 tttaaaaatt caaatgattt ttacaagttt taaataagct ctccccaaac ttgctttatg 2640 ccttcttatt gcttttatga tatatatatg cttggctaac tatatttgct ttttgctaac 2700 aatgctctgg ggtcttttta tgcatttgca tttgctcttt catctctgct tggattattt 2760 taaatcatta ggaattaagt tatctttaaa atttaagtat ctttttcca aaacatttt 2820 2880 aaaaaa 2887

<210> 22

<211> 464

<212> PRT

<213> Homo sapiens

<400> 22

Met Asp Phe Ser Arg Asn Leu Tyr Asp Ile Gly Glu Gln Leu Asp Ser 1 5 15

Glu Asp Leu Ala Ser Leu Lys Phe Leu Ser Leu Asp Tyr Ile Pro Gln 20 25 30

Arg Lys Gln Glu Pro Ile Lys Asp Ala Leu Met Leu Phe Gln Arg Leu 35 40 45

Gln Glu Lys Arg Met Leu Glu Glu Ser Asn Leu Ser Phe Leu Lys Glu 50 55 60

Leu Leu Phe Arg Ile Asn Arg Leu Asp Leu Leu Ile Thr Tyr Leu Asn 65 70 75 80

Thr Arg Lys Glu Glu Met Glu Arg Glu Leu Gln Thr Pro Gly Arg Ala 85 90 95

Gln Ile Ser Ala Tyr Arg Val Met Leu Tyr Gln Ile Ser Glu Glu Val 100 105 110

Ser Arg Ser Glu Leu Arg Ser Phe Lys Phe Leu Leu Gln Glu Glu Ile 115 120 125

Ser Lys Cys Lys Leu Asp Asp Asp Met Asn Leu Leu Asp Ile Phe Ile 130 135 140

Glu Met Glu Lys Arg Val Ile Leu Gly Glu Gly Lys Leu Asp Ile Leu 145 150 155 160

Lys Arg Val Cys Ala Gln Ile Asn Lys Ser Leu Leu Lys Ile Ile Asn 165 170 175

Asp Tyr Glu Glu Phe Ser Lys Gly Glu Glu Leu Cys Gly Val Met Thr 180 185 190

Ile Ser Asp Ser Pro Arg Glu Gln Asp Ser Glu Ser Gln Thr Leu Asp 195 200 205

Lys Val Tyr Gln Met Lys Ser Lys Pro Arg Gly Tyr Cys Leu Ile Ile 210 215 220

Asn Asn His Asn Phe Ala Lys Ala Arg Glu Lys Val Pro Lys Leu His 225 230 235 240

Ser Ile Arg Asp Arg Asn Gly Thr His Leu Asp Ala Gly Ala Leu Thr 245 250 255

Thr Thr Phe Glu Glu Leu His Phe Glu Ile Lys Pro His Asp Asp Cys 260 265 270

Thr Val Glu Gln Ile Tyr Glu Ile Leu Lys Ile Tyr Gln Leu Met Asp 275 280 285

His Ser Asn Met Asp Cys Phe Ile Cys Cys Ile Leu Ser His Gly Asp 290 295 300

Lys Gly Ile Ile Tyr Gly Thr Asp Gly Gln Glu Ala Pro Ile Tyr Glu 305 310 315 320

Leu Thr Ser Gln Phe Thr Gly Leu Lys Cys Pro Ser Leu Ala Gly Lys 325 330 335

Pro Lys Val Phe Phe Ile Gln Ala Cys Gln Gly Asp Asn Tyr Gln Lys 340 345 350

Gly Ile Pro Val Glu Thr Asp Ser Glu Glu Gln Pro Tyr Leu Glu Met 355 360 365

Asp Leu Ser Ser Pro Gln Thr Arg Tyr Ile Pro Asp Glu Ala Asp Phe 370 375 380

Leu Leu Gly Met Ala Thr Val Asn Asn Cys Val Ser Tyr Arg Asn Pro 385 390 395 400

Ala Glu Gly Thr Trp Tyr Ile Gln Ser Leu Cys Gln Ser Leu Arg Glu 405 410 415

Arg Cys Pro Arg Gly Asp Asp Ile Leu Thr Ile Leu Thr Glu Val Asn 420 425 430

Tyr Glu Val Ser Asn Lys Asp Asp Lys Lys Asn Met Gly Lys Gln Met 435 440 445

Pro Gln Pro Thr Phe Thr Leu Arg Lys Lys Leu Val Phe Pro Ser Asp 450 455 460

<210> 23

10

<211> 2619

<211> 2613 <212> DNA

<213> Homo sapiens

<400> 23

gtagtggata ggcctgtgac gaaggtgcta ccatcgtgag agtaagatta tattctcctg 60 ccttttaaaa agatggactt cagcagaaat ctttatgata ttggggaaca actggacagt 120 gaagatctgg cctccctcaa gttcctgagc ctggactaca ttccgcaaag gaagcaagaa 180 cccatcaagg atgccttgat gttattccag agactccagg aaaagagaat gttggaggaa 240 agcaatctgt cetteetgaa ggagetgete tteegaatta atagaetgga tttgetgatt 300 acctacctaa acactagaaa ggaggagatg gaaagggaac ttcagacacc aggcagggct 360 caaatttctg cctacagggt catgctctat cagatttcag aagaagtgag cagatcagaa 420 ttgaggtctt ttaagtttct tttgcaagag gaaatctcca aatgcaaact ggatgatgac 480 atgaacctgc tggatatttt catagagatg gagaagaggg tcatcctggg agaaggaaag 540 ttggacatcc tgaaaagagt ctgtgcccaa atcaacaaga gcctgctgaa gataatcaac 600 gactatgaag aattcagcaa aggggaggag ttgtgtgggg taatgacaat ctcggactct 660 ccaagagaac aggatagtga atcacagact ttggacaaag tttaccaaat gaaaagcaaa 720 cctcggggat actgtctgat catcaacaat cacaattttg caaaagcacg ggagaaagtg 780 cccaaacttc acagcattag ggacaggaat ggaacacact tggatgcagg ggctttgacc 840 acgacctttg aagagcttca ttttgagatc aagccccacg atgactgcac agtagagcaa 900 atctatgaga ttttgaaaat ctaccaactc atggaccaca gtaacatgga ctgcttcatc 960 tgctgtatcc tctcccatgg agacaaaggc atcatctatg gcactgatgg acaggaggcc 1020 cccatctatg agctgacatc tcagttcact ggtttgaagt gcccttccct tgctggaaaa 1080 cccaaagtgt tttttattca ggcttgtcag ggggataact accagaaagg tatacctgtt 1140 gagactgatt cagaggagca accetattta gaaatggatt tatcatcacc tcaaacgaga 1200 tatatcccgg atgaggctga ctttctgctg gggatggcca ctgtgaataa ctgtgtttcc 1260 taccgaaacc ctgcagaggg aacctggtac atccagtcac tttgccagag cctgagagag 1320 cgatgtcctc gaggcgatga tattctcacc atcctgactg aagtgaacta tgaagtaagc 1380 aacaaggatg acaagaaaaa catggggaaa cagatgcctc agcctacttt cacactaaga 1440 1500 ttttttgaga cagaatctcg ctctgtcgcc caggctggag tgcagtggcg tgatctcggc 1560 teacegeaag eteegeetee egggtteaeg ceatteteet geeteageet eeegagtage 1620 tgggactaca ggggcccgcc accacactg gctaattttt taaaaatatt tttagtagag 1680 acagggtttc actgtgttag ccagggtggt cttgatctcc tgacctcgtg atccacccac 1740 ctcggcctcc caaagtgctg ggattacagg cgtgagccac cgcgcctggc cgatggtact 1800 atttagatat aacactatgt ttatttacta attttctaga ttttctactt tattaattgt 1860 tttgcacttt tttataagag ctaaagttaa ataggatatt aacaacaata acactgtctc 1920 ctttctctta tgcttaaggc tttgggaatg tttttagctg gtggcaataa ataccagaca 1980 cgtacaaaat ccagctatga atatagaggg cttatgattc agattgttat ctatcaacta 2040 taagcccact gttaatattc tattaacttt aattctcttt caaagctaaa ttccacacta 2100

ccacattaaa	aaaattagaa	agtagccacg	tatggtggct	catgtctata	atcccagcac	2160
tttgggaggt	tgaggtggga	ggatttgctt	gaacccaaga	ggtccaaggc	tgcagtgagc	2220
catgttcaca	ccgctgcact	caagcttggg	tgacagagca	agaccccgtc	cccaaaaaaa	2280
tttttttt	aataaaccca	aatttgtttg	aaaactttta	aaaattcaaa	tgatttttac	2340
aagttttaaa	taagctctcc	ccaaacttgc	tttatgcctt	cttattgctt	ttatgatata	2400
tatatgcttg	gctaactata	tttgcttttt	gctaacaatg	ctctggggtc	tttttatgca	2460
tttgcatttg	ctctttcatc	tctgcttgga	ttattttaaa	tcattaggaa	ttaagttatc	2520
tttaaaattt	aagtatcttt	tttccaaaac	attttttaat	agaataaaat	ataatttgat	2580
cttaaaaaaa	aaaaaaaaa	aaaaaaaaa	aaaaaaaaa			2619